



Effective Health Care

Physiologic Second Stage of Labor

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- The topic, *Physiologic Second Stage of Labor*, was found to be addressed by one in-process Cochrane systematic review and two published Cochrane systematic reviews. Given that these existing systematic reviews cover this nomination, no further activity will be undertaken on this topic.
 - Lemos A, Amorim MMR, de Andrade AD, de Souza AI, Filho JEC, Correia JB. Intervention Protocol: Pushing/bearing down methods for the second stage of labour. Cochrane Database of Systematic Reviews 2011, Issue 5. Available at: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD009124/abstract>.
 - Kemp E, Kenghswood CJ, Kibuka M, Thornton JG. Position in the second stage of labour for women with epidural anesthesia. Cochrane Database of Systematic Reviews 2013, Issue 1.
 - Gupta JK, Hofmeyr GJ, Shehmar M. Position in the second stage of labour for women without epidural anaesthesia. Cochrane Database of Systematic Reviews 2012, Issue 5.

Topic Description

Nominator(s): Two health care professional associations in partnership

Nomination Summary: The nominators assert that significant clinical variation exists in the management of the second stage of labor (which begins when the cervix is dilated to 10 cm and ends with the delivery of the baby). Furthermore, the nominators assert that spontaneous (physiologic) practices may result in better labor outcomes as well as benefits to the mother and child. In clinical practice currently, variation exists in both pushing/breathing strategies as well as maternal positioning but is often guided by the clinician rather than the mother or her spontaneous, physiologic urges.

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Key Question #1

Population(s): Pregnant women experiencing the second stage of labor; fetuses and neonates

Intervention(s): Woman-initiated, spontaneous pushing. Interventions that let women respond to a natural urge to push or a bearing down effort that comes and goes several times during each contraction.

Comparator(s): Coached, closed airway pushing during the second stage of labor.

Outcome(s): (1) Labor outcomes (e.g., length of active second stage, cesarean rate, need for instrument-assisted vaginal birth rate); (2) Maternal outcome (e.g., blood loss, perineal tearing, satisfaction with labor,

postpartum fatigue, bladder function); (3) Infant outcomes (e.g., Apgar scores at 1 and 5 minutes, venous and arterial cord blood gases, infant breastfeeding affected by maternal exhaustion)

Key Question #2

Population(s): Pregnant women experiencing the second stage of labor; fetuses and neonates

Intervention(s): Woman-determined positioning, interventions that let women choose the position during labor.

Comparator(s): Dorsal, supine lithotomy position.

Outcome(s): (1) Labor outcomes (e.g., length of active second stage, cesarean rate, need for instrument-assisted vaginal birth rate); (2) Maternal outcome (e.g., blood loss, perineal tearing, satisfaction with labor, postpartum fatigue, bladder function); (3) Infant outcome (e.g., Apgar scores at 1 and 5 minutes, venous and arterial cord blood gases, Infant breastfeeding)

Key Questions from Nominator:

1. For women in the second stage of labor, what are the risks and benefits of physiologic or woman-initiated pushing and breathing as compared to coached, guided or delayed pushing and breathing for both maternal and infant outcomes?
2. For women in the second stage of labor, what are the risks and benefits of woman-determined positioning as compared to recumbent or semi-recumbent positioning for both maternal and infant outcomes?

Considerations

- The Centers for Disease Control and Prevention (CDC) reported that nearly 4 million deliveries occurred in 2013, approximately two-thirds of which were vaginal deliveries. Every woman who delivers a baby vaginally experiences the second stage of labor. The second stage of labor begins when the cervix is dilated to 10 cm and continues through the full delivery of the baby. Even in low risk pregnancies, the second stage of labor presents serious health risks, including maternal mortality and maternal and infant morbidity (e.g., as a result of hemorrhage, perineal trauma, postpartum fatigue, postpartum urinary disruption, decreased fetal oxygen saturation, and fetal acidosis).
- When these issues are anticipated or arise during delivery, medical interventions such as device assisted (operative) delivery and cesarean sections are often performed, each of which presents its own potential risks. In the US, approximately 32% of births are by cesarean section and 5% of all vaginal deliveries are device assisted, and risks associated with these procedures include immediate issues such as pain, blood loss, and perineal lacerations and long term problems such as urinary and fecal incontinence.
- In the US today, common practice for vaginal delivery includes coached, closed airway pushing in the lithotomy position. The lithotomy position involves positioning the mother's feet above or at the same level as the hips (often in stirrups) with the perineum positioned at the end of the examination table. This position provides physicians with visual and physical access to the perineal region. Alternative positions for childbirth include lateral position (Sims), partial sitting or squatting position, or hands and knees. However, the lithotomy (supine) position is most often used.

- An improved understanding of optimal labor management during the second stage of labor could decrease adverse outcomes resulting from unnecessary or less effective methods of delivery and improve the health of both the mother and the child.
- This topic has two main areas: 1. Woman-initiated, spontaneous pushing – interventions that let women respond to a natural urge to push or a bearing down effort that comes and goes several times during each contraction; and 2. Woman-determined positioning – interventions that let women choose the position during labor.
- A protocol for a relevant in-process Cochrane systematic review on woman-initiated, spontaneous pushing was identified. The protocol for the review titled, *Pushing/Bearing Down Methods for the Second Stage of Labour*, indicates that the review “...will concentrate on all eligible studies using spontaneous versus directed pushing and delayed versus early pushing for bearing down during the second stage of labour, with and without analgesia.” It will assess the benefits and harms of various pushing and breathing methods (e.g., duration of pregnancy, perineal tearing, maternal incontinence, fetal heart rate) during the second stage of labor. The completed Cochrane systematic review will be published in a few months.
- Two Cochrane systematic reviews relevant to woman-determined positioning during labor were also identified.
 - A 2013 Cochrane systematic review titled, *Position in the Second Stage of Labour for Women With Epidural Anesthesia*, found no significant differences about the effects of positioning in women with epidural anesthesia, and that these women should use whatever position they find comfortable.
 - A 2012 Cochrane systematic review titled, *Position in the Second Stage of Labor for Women Without Epidural Anesthesia*, found several possible benefits to using an upright posture compared to the supine position in women without epidural anesthesia. Benefits included reduced duration of the second stage of labor, reduction in assisted deliveries, and fewer episiotomies; however, there was an increased risk of blood loss among women in an upright position.
- There appears to be limited new evidence that has been published that would significantly contribute to or change the findings of the identified systematic reviews.